Application No: 10/070,867
Attorney's Docket No: IT 010006

SPECIFICATION AMENDMENTS

Please replace the paragraph beginning on page 1, line 8, with the following rewritten paragraph:

The invention relates to ~~codingen~~encoding and decoding of data stream.

Please replace the paragraph beginning on page 2, line 6, with the following rewritten paragraph:

The invention is based on the insight that in a coding scheme like MPEG-4, packets are not exactly of the same length and partitions have different lengths in different packets, due to the variable length coding used and to the requirement of having an integer number of ~~macro-blocks~~ macroblocks in each packet. This implies that a fixed UEP scheme cannot be used and, in order to perform decoding with the correct code rate, the bit-stream structure should be known at the receiver, at channel decoding level. Packets, like partitions, are not of the same length; thus the UEP scheme should be dynamically changed for each packet and the knowledge of the partition length is required. This problem is addressed by including in the data stream, information about the lengths of the partitions that are or have been protected, e.g. in the form of a length field. Such a length field may be added in each packet after the resync marker. At the receiver side, the length information is read. UEP channel decoding may then be performed with the knowledge of the length of each partition.

Please replace the paragraph beginning on page 4, line 3, with the following rewritten paragraph:

Due to compression and in particular to the use of predictive coding and Variable Length Coding (VLC), an MPEG-4 bit-stream is very sensitive to errors. The article of R. Talluri, "Error-resilient video coding in the ISO MPEG-4 standard", IEEE Communication Magazine, vol. 36, no.6, June 1998 describes error resilience aspects of the video coding techniques that are standardized in the ISO MPEG-4 standard. The specific tools adopted into the ISO MPEG-4 standard to enable the communication of compressed video data over noisy wireless channels are presented in detail. These techniques include resynchronization strategies, data partitioning, reversible Variable Length ~~Codes~~Coding, and header extension codes.

Please replace the paragraph beginning on page 10, line 1, with the following rewritten paragraph:

Advantageously, at the transmitter side, respective markers are substituted with respective higher-robustness words obtained from a predetermined set of higher-robustness words, each higher-robustness word in the set of higher-robustness words representing a given marker in the predetermined set of markers. By substituting the markers by a corresponding higher-robustness word, fast and advantageous coding is provided. The higher-robustness words can ~~fast~~quickly and easily be obtained from a look-up table. Coding errors that could be obtained when the markers are coded with a pseudo-noise sequence impressed on the marker are avoided.

Please replace the paragraph beginning on page 11, line 13, with the following rewritten paragraph:

In the proposed scheme, start codes in a data stream S2 are substituted (see Fig. 6) with pseudo-noise words WH1...WH5, which are sequences with high correlation properties (e.g. Gold sequences). These new start codes are denoted by *Wireless Start Codes*. In particular, a substitution is performed for VO, VOL, VOP, GOV start codes and for the ~~Resync~~ resync marker. The data stream in Fig. 6 does not include the GOV start code (H3), considering the MPEG-4 bit-stream. In the MPEG-4 bit-stream there is no GOV start code (H3) after the VOL start code (H2), because the VOL start code (H2) also indicates the beginning of a GOV.